

Notice of Allowability

Application No.

10/788,724

Examiner

Charlie Peng

Applicant(s)

FOX, JOHN S.

Art Unit

2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 21 May 2007.
2. ☒ The allowed claim(s) is/are 1,3-18 and 20-26.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☒ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

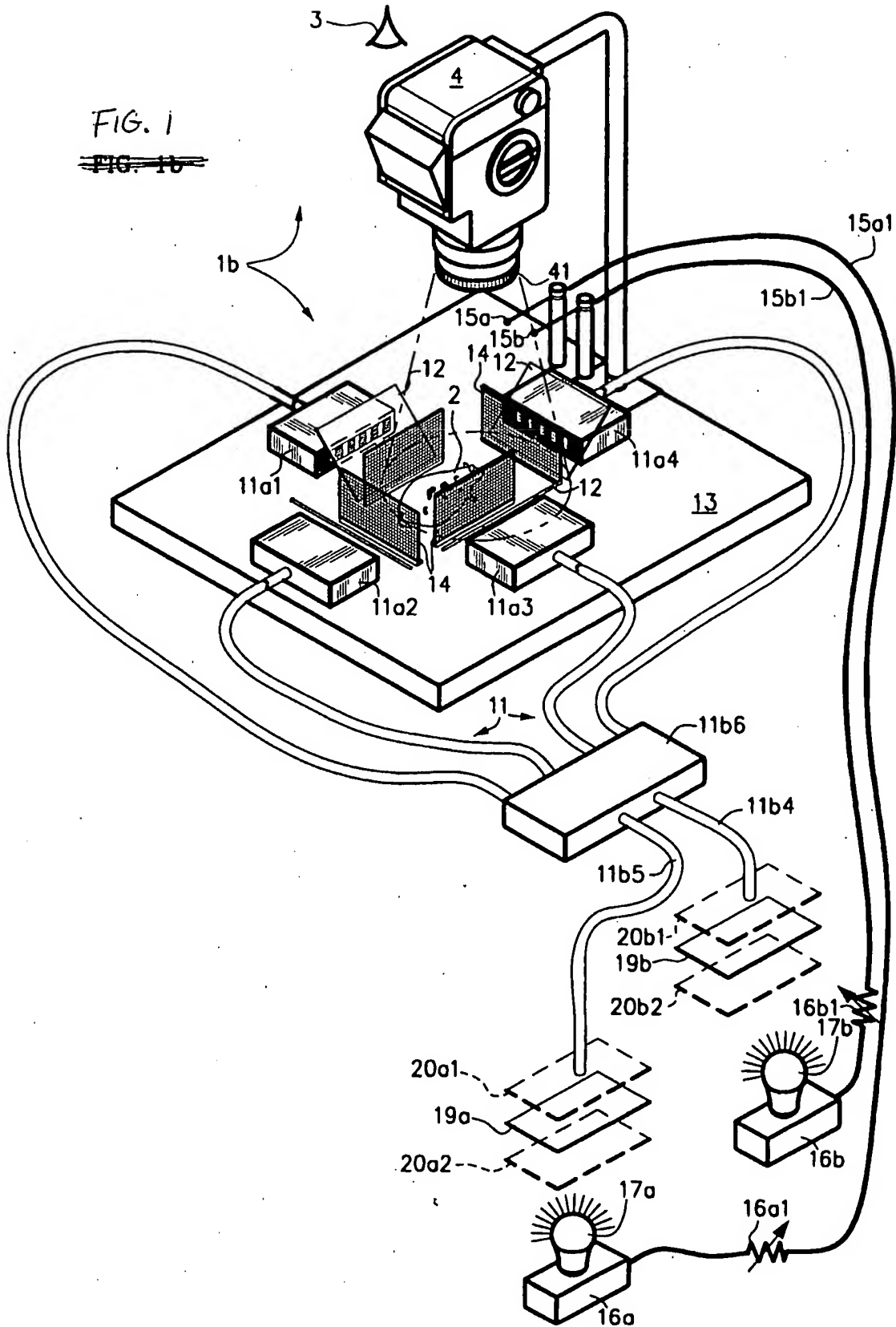
Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>20070621</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

 $\frac{1}{2}$

FIG. 1

~~FIG. 1b~~



DETAILED ACTION

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with J. Fox on 04 June 2007.

The application has been amended as follows:

1. Specifications and Drawings:

Page 1, Paragraph 1 of the Specifications is amended as follows:

The present patent application is related to U.S. patent application Serial No. ~~AAA,AAA-10/810,993~~ (now U.S. Patent 7,173,256) for a FLUORESCENT IMAGE CALIBRATION STEP WEDGE, AND USE THEREOF IN ILLUMINATION FOR FLUORESCENT IMAGING AND AUTOMATIC EXPOSURE. The present patent application is also related to U.S. patent application Serial No. ~~BBB,BBB-10/775,792~~ for ILLUMINATING AND PANORAMICALLY VIEWING A MACROSCOPICALLY-SIZED SPECIMEN ALONG A SINGLE VIEWING AXIS AT A SINGLE TIME. Both related patent applications are to the selfsame John Fox who is the inventor of the present application. The contents of the related patent applications are incorporated herein by reference.

Page 29, line 10 of the Specifications is amended as follows:

Art Unit: 2883

Replace “__ inches by __ inches in size” with -- 3 inches by 2 inches in size --

Drawings, page 1:

Replace Fig. 1b” with -- Fig. 1 -- as shown

2. Claim 1 is amended as follows:

1. (Examiner Amended) An apparatus for illuminating a macroscopically-sized specimen for observation along a viewing axis, the apparatus comprising:

a stage for supporting a specimen to be observed;

a first illumination source of first radiation of a first color;

a second illumination source of second radiation of a second color, different from the first color;

a multiple-end fiber optic cable having at least two input and at least two output ends, a first multiplicity of fiber optic strands receiving the first radiation into a first one of the at least two input ends and a second multiplicity of fiber optic strands receiving the second radiation into a second one of the at least two input ends;

wherein each strand of the first and second multiplicity of fiber optic strands provides a [discreet] discrete optical path, and

wherein the first multiplicity of fiber optic strands is substantially and randomly interspersed with the second multiplicity of fiber optic strands within the multiple-end fiber optic cable, so that the radiation output at each of the at least two output ends of the fiber optic cable is substantially everywhere a combination of the first radiation and the second radiation to illuminate the specimen supported upon the stage so that the specimen may be observed along the view axis.

3. Claim 11 is amended as follows:

11. (Examiner Amended) A method of illuminating a macroscopically-sized specimen for observation along a viewing axis, the method comprising:

supporting upon stage a specimen to be observed;

first illuminating with first radiation of a first frequency a first one of at least two input ends of a fiber optic cable a first multiplicity of fiber optic strands;

second illuminating with second radiation of a second frequency, different than the first frequency, a second one of at least two input ends of the fiber optic a second multiplicity of fiber optic strands;

providing a [~~discreet~~] discrete optical path with each strand of the first and second multiplicity of fiber optic strands, and

producing in at least one output end of the fiber optic cable both the first-frequency first radiation and also the second-frequency second radiation, and illuminating the specimen supported upon the stage with this combined first-frequency first radiation and also the second-frequency second radiation from a single fiber optic cable end so that the specimen can be observed, as illuminated, along the viewing axis.

substantially and randomly interspersing the first multiplicity of fiber optic strands with the second multiplicity of fiber optic strands within the fiber optic cable, and vice versa, so that the radiation output at each of the at least two output ends of the fiber optic cable is substantially everywhere a combination of the first radiation and the second radiation.

4. Claim 18 is amended as follows:

Art Unit: 2883

18. (Examiner Amended) An apparatus for illuminating a macroscopically-sized specimen for observation along a viewing axis, the apparatus comprising:

a stage for supporting a specimen to be observed;

a first illumination source of first radiation of a first color;

a second illumination source of second radiation of a second color, different from the first color;

a fiber optic cable receiving the first radiation into a first multiplicity of fiber optic strands one of two radiation-receiving, or input, ends and receiving the second radiation into a second multiplicity of fiber optic strands one of the two radiation-receiving ends, wherein each strand of the first and second multiplicity of fiber optic strands provides a [~~discreet~~] discrete optical path, and,

responsively to the receiving, producing at each of the at least two radiation-emitting, or output, ends both the first radiation and the second radiation;

wherein a combined, dual-color, radiation produced at each of the at least two radiation-emitting, or output, ends of the fiber optic cable is used to illuminate the specimen supported upon the stage along at least two separate illumination, and viewing[,] axis. wherein the first multiplicity of fiber optic strands is substantially and randomly interspersed with the second multiplicity of fiber optic strands within the fiber optic cable, and vice versa, so that the radiation output at each of the at least two output ends of the fiber optic cable is substantially everywhere a combination of the first radiation and the second radiation.

5. Claim 21 is amended as follows:

Art Unit: 2883

21. (Examiner Amended) A method of illuminating a macroscopically-sized specimen for observation along a viewing axis, the method comprising:

supporting upon stage a specimen to be observed;

first illuminating with first radiation of a first color a first one of two radiation-receiving, or input, ends of the fiber optic cable a first multiplicity of fiber optic strands;

second illuminating with second radiation of a second color, different than the first color, a second one of two radiation-receiving, or input, ends of the fiber optic cable[;] a second multiplicity of fiber optic strands;

substantially and randomly interspersing the first and second multiplicity of fiber optic strands; [and]

providing a [~~disereet~~] discrete optical path with each strand of the first and second multiplicity of fiber optic strands, and

third illuminating with both first-frequency first radiation, and also second-frequency second radiation, from each of at least two radiation-emitting, or output, ends of the fiber optic cable a specimen supported upon the stage so that the specimen can be observed, as illuminated, along a single viewing axis.

Election/ Restriction

Claims 1, 11, 18 and 21 are directed to an allowable product and process of using the same. Pursuant to the procedures set forth in MPEP § 821.04(B), claims 3-10, 12-17, 20 and 22-26 directed to species sharing generic claims with the allowed product and process, previously withdrawn from consideration as a result of a restriction

Art Unit: 2883

requirement, claims 3-10, 12-17, 20 and 22-26 are hereby rejoined and fully examined for patentability under 37 CFR 1.104.

Because all claims previously withdrawn from consideration under 37 CFR 1.142 have been rejoined, **the restriction requirement as set forth in the Office action mailed on 21 September 2005 is hereby withdrawn.** In view of the withdrawal of the restriction requirement as to the rejoined inventions, applicant(s) are advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Once the restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. See *In re Ziegler*, 443 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

Allowable Subject Matter

Claims 1, 11, 18 and 21 are allowed. The following is an examiner's statement of reasons for allowance:

Applicant discloses an apparatus for illuminating a macroscopic sized specimen using a special fiber optic cable to consolidate multiple input signals having different radiations/colors, as well as multiple output ends, each of which comprises all of the colors present on the input ends.

Previously cited references such as Sander and Muthu et al. do not teach or suggest first and second multiplicity of fiber optic stands providing a discrete optical path within each strand, nor substantially and randomly interspersing the first and

Art Unit: 2883

second multiplicity of fiber optic strands. Sopori teaches a randomized trifurcated fiber optic cable but lacks single radiation light inputs and discrete optical paths, and more importantly, lacks a reason why one of ordinary skill in the art would seek to split an outputting end of the cable into multiple output ends after the fibers are randomized. This is advantageous since output ends of the special fiber optic cable are particularly so consolidated so that the radiations received at the other, input ends are thoroughly mixed and randomized when emitted. Such a special fiber optic cable made from a multiplicity of fiber optic strands serves to mix the illuminating color radiations received at its multiple inputs so that all color radiations appear at each of multiple outputs.

It is the examiner's position that prior art taken alone or in combination, fails to disclose or render obvious randomly interspersed fibers with discrete optical path as claimed by applicant, in combination with rest of the limitations in the base claims.

Claims 3-10, 12-17, 20 and 22-26 are allowed as dependent claims of the allowed claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charlie Peng whose telephone number is (571) 272-2177. The examiner can normally be reached on 9 am - 6 pm M-F..

Art Unit: 2883

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

cyp



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